

IN THE CLAIMS

Please amend Claims 1 and 13 as indicated.

Please add new Claim 55 as indicated.

Please cancel Claims 15, 25-47 as indicated.

1. (Currently Amended) An electronic musculoskeletal stimulation apparatus comprising:

    a housing formed by one or more layers of water resistant material;

    a control circuit connected to two or more electrodes, wherein said control circuit and said electrodes are substantially contained within the housing; wherein the control circuit includes a microcontroller programmed to selectively provide:

        a first treatment intensity having a first duty cycle,

        a second treatment intensity having a second duty cycle, and

        a third treatment intensity having a third duty cycle, and

    a layer of electrical insulation surrounding at least a portion of the control circuit;

wherein the apparatus outputs a plurality of electrical pulses, the plurality of electrical pulses including a first electrical pulse substantially larger than a plurality of subsequent substantially square waveform pulses.

2. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1,

wherein said apparatus has an adjustable voltage intensity which ranges from approximately 90 volts to 180 volts.

3. Cancelled.

4. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said first treatment intensity outputs approximately 90 to 99 volts.

5. Cancelled.

6. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said second treatment intensity outputs approximately 100 to 150 volts.

7. Cancelled.

8. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said third treatment intensity outputs approximately 155 to 180 volts.

9-12. Cancelled.

13. (Currently Amended) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said apparatus outputs a square waveform pulses are at a constant current.

14. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said apparatus uses a frequency of approximately 0.1 to 4000 hertz.

15. Cancelled

16. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said apparatus has a pulse-width of approximately 0.01 microseconds to 50 milliseconds.

17. Cancelled.

18. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said microcontroller is programmed to output approximately thirty pulses over a four second duration.

19. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said apparatus includes at least two buttons, whereby the first button powers said apparatus on and off and selects an intensity of said stimulation and the second button activates said stimulation.

20. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said apparatus includes at least one indicator that displays the selected treatment intensity.

21. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 20, wherein said apparatus includes three indicators whereby each indicator corresponds to an intensity of stimulation and displays which intensity has been selected, when said apparatus is delivering treatment, and what intensity treatment is being delivered to a patient.

22-47. Cancelled

48. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein the housing is conformable to a portion of a body.

49. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein said apparatus is attachable to said body with adhesive comprising one or more electrogel pads.

50. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein the first duty cycle is between approximately 9% and 14%.

51. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 50, wherein the second duty cycle is between approximately 26% and 31%.

52. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 51, wherein the third duty cycle is between approximately 47% and 53%.

53. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 1, wherein the microcontroller is programmed to modulate the selected duty cycle for a first interval of approximately 45 milliseconds.

54. (Previously Presented) The electronic musculoskeletal stimulation apparatus of claim 53, wherein the microcontroller is programmed to modulate the selected duty cycle for a second interval of approximately 93 milliseconds.

55. (New) An electronic musculoskeletal stimulation apparatus comprising:

a control circuit connected to two or more electrodes, wherein at least one of the two or more electrodes outputs a plurality of electrical pulses, the plurality of electrical pulses including a first electrical pulse substantially larger than a plurality of subsequent substantially square waveform pulses.